

REMARKS

Claims 1-22 are all the claims pending in the application.

Initially, the Examiner is respectfully requested again to indicate that the drawings filed on August 2, 2005 have been accepted.

I. Response to Rejection of Claims 1-12 under 35 U.S.C. §103(a)

Claims 1-12 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Nakaoka et al. (US 4,336,080) in view of Chatfield et al. (US 4,159,218).

Applicants respectfully traverse the rejection.

Claim 1 recites a process for producing a cold-rolled ferritic/martensitic dual-phase steel strip, wherein a slab, the chemical composition of which comprises, by weight:

$$\begin{aligned}0.010\% &\leq C \leq 0.100\% \\0.050\% &\leq Mn \leq 1.0\% \\0.010\% &\leq Cr \leq 1.0\% \\0.010\% &\leq Si \leq 0.50\% \\0.001\% &\leq P \leq 0.20\% \\0.010\% &\leq Al \leq 0.10\% \\N &\leq 0.010\%\end{aligned}$$

the balance being iron and impurities resulting from the smelting, is hot rolled, said process then comprising the steps consisting in: coiling the hot-rolled strip obtained at a temperature of between 550 and 850° C; then cold rolling the strip with a reduction ratio of between 60 and 90%; then annealing the strip continuously in the intercritical range; and cooling it down to the ambient temperature in one or more steps, the cooling rate between 600°C and the ambient temperature being between 100°C/s and 1500°C/s; and optionally tempering it at a temperature below 250°C, the annealing and cooling operations being carried out in such a way that the strip finally contains from 1 to 15% martensite.

Thus, the claimed steel contains from 1 to 15% martensite.

In contrast, the steel of Nakaoka is not martensite. The process disclosed in Nakaoka

requires the step of overaging, which has a metallurgical effect to turn the eventual martensite into ferrite. Martensite is very hard and can be destroyed by the application of heat because of its metastable phase. *See e.g.*, <http://en.wikipedia.org/wiki/martensite>. That is, martensite is the kinetic product of rapid cooling of steel containing sufficient carbon. Since chemical process (the attainment of equilibrium) accelerate at higher temperature, martensite is easily destroyed by the application of heat. Since the process of Nakaoka requires overaging (i.e. the application of heat), the steel of Nakaoka does not contain martensite.

In this regard, the Examiner asserts that the volume ratio of the low-temperature transformation phase is up to 10% of the structure as a whole. *See* col. 9, lines 3-7.

However, it is respectfully submitted that "low transformation phase" does not necessarily mean martensite and includes bainite or mixtures of martensite and bainite. Thus, even if Nakaoka discloses that up to 10% low-temperature transformation phase is present, such disclosure does not mean that up to 10% martensite is present.

Furthermore, the Examiner asserts that Nakaoka and Chatfield disclose substantially identical methods for producing a steel strip. However, such is not the case.

Nakaoka's steel is cold-rolled whereas Chatfield's steel is hot-rolled.

In addition, Nakaoka seeks to reduce tensile strength whereas Chatfield seeks to increase tensile strength.

Furthermore, the Examiner asserts that one of ordinary skill in the art would use chromium in Nakaoka to reduce the cost. However, Chatfield discloses a manganese content of 1.25-1.8% and discloses that cost factors are significantly lower than that found in a steel having an increased manganese content -- that is, more than 1.8%. Since Nakaoka discloses a manganese content of significantly lower than 1.25%, the cost would not be an overriding reason to add chromium in view of the other differences.

Based on the differences between Nakaoka and Chatfield, it is respectfully submitted that there is no ***rational*** reason why one of ordinary skill in the art would combine the

references.

It is respectfully pointed out that the Examiner that the entire reference must be considered as a whole. Therefore, the Examiner cannot ignore the portions of the reference which teach away from the claimed invention.

For at least the above reasons, it is respectfully submitted that there is no motivation to combine Nakaoka with Chatfield, and thus, a *prima facie* case of obviousness has not been established.

In view of the above, it is respectfully submitted that claims 1-12 are patentable over Nakaoka and Chatfield, and withdrawal of the rejection is respectfully requested.

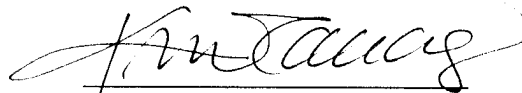
II. Conclusion

For the foregoing reasons, reconsideration and allowance of claims 1-12 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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